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| APPLICATION NO.           | FILING DATE | FIRST NAMED INVENTOR    | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|---------------------------|-------------|-------------------------|----------------------|------------------|
| 09/838,356                | 04/19/2001  | Karl Jacob Haltiner JR. | DP-304959 (DEP-0197) | 2480             |
| 22851                     | 7590        | 08/23/2005              | EXAMINER             |                  |
| DELPHI TECHNOLOGIES, INC. |             |                         | WILLS, MONIQUE M     |                  |
| M/C 480-410-202           |             |                         | ART UNIT             |                  |
| PO BOX 5052               |             |                         | PAPER NUMBER         |                  |
| TROY, MI 48007            |             |                         | 1746                 |                  |

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/838,356

Applicant(s)

HALTINER ET AL.

Examiner

Monique M. Wills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-30, 32-38 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-30, 32-38 & 47-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

This Office Action is responsive to the Amendment filed June 9, 2005.

The objection to the specification is overcome. The rejection of claims 26,29,31 & 34-36 under 35 U.S.C. 102(e) as being anticipated by Armstrong et al. U.S. Patent 6,682,841 is overcome. The rejection of claims 27, 28, 30, 32-33 & 37-38 under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al. U.S. Patent 6,682,841 is overcome. However, claims 26-30, 32-38 & 47-49 are newly rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al. U.S. Patent 6,682,841.

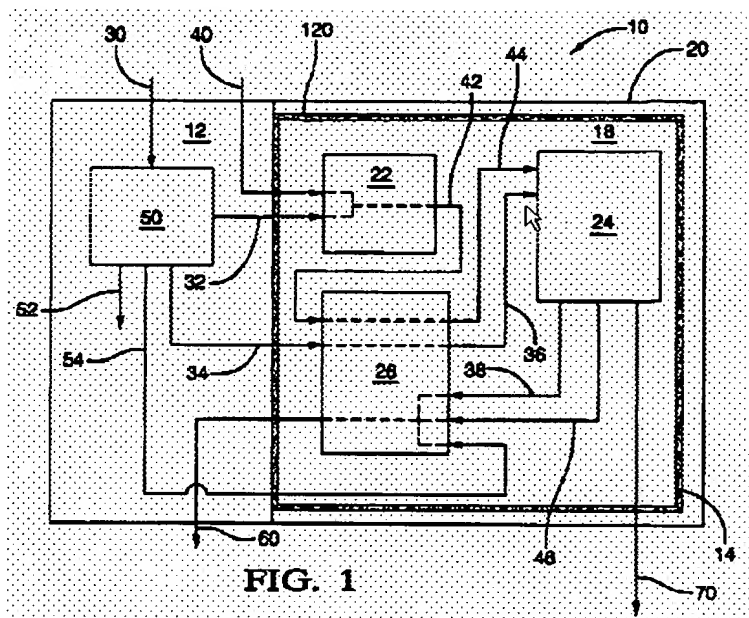
***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-30, 32-38 & 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al. U.S. Patent 6,682,841.

With respect to claim 26, Armstrong teaches a method of producing electricity in an auxiliary power unit of a vehicle comprising: adding a fuel (40) and a reactant (32) to a fuel reformer (22); producing a reformat (42) at said fuel reformer (22); introducing said reformat (42) to a fuel cell stack (24); producing electrical power at said fuel cell stack (24); sensing a reformer zone temperature at a reformer zone (18); determining whether said reformer zone temperature is at a first selected temperature range; and adding a first process (32) air flow to said reformer zone (18) if said reformer zone temperature rises above said first selected temperature range. See Figure 1, and column 2, lines 1-5. As to claim 29, the first process airflow is controlled via a first air control valve. See column 3, lines 10-15. As to claim 34, the method further comprises controlling the second process airflow via a second air control valve (col. 3, lines 10-15). With respect to claim 35, the method further comprises moving reformer air (42) to the hot zone (26). As to claim 36, the method further comprises moving hot air to a waste energy recovery unit (26). With respect to claims 47 & 48, the reformer zone and hot zone are insulated enclosures (120). See Figure 1.



Armstrong is silent to: the fuel reformer being positioned within the reformer zone, and the fuel cell stack being positioned within the hot zone (claim 26); reducing the first process air flow to the reformer zone when the temperature falls below a predetermined temperature (claim 27); increasing the first process air flow to the reformer when the reformer zone temperature is above a predetermined temperature range (claim 28); a first temperature range of about 300 to 500 degrees (claims 30 & 49); reducing air flow to the hot zone when the hot zone temperature falls below a second selected temperature range

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(claim 32); increasing the second process air flow to the hot zone if the hot zone temperature increases above the second selected temperature range (claim 33); a second selected temperature range of 600 to 800 degrees (claim 37) and a second selected temperature range of 725 to 775 degrees (claim 38).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made for the fuel reformer being positioned within the reformer zone, and the fuel cell stack being positioned within the hot zone, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

With respect to adjusting the air flow rate to maintain a predetermined temperature set point, the adjustment would have been obvious to one of ordinary skill in the art, because the skilled artisan recognizes that if the temperature is above the set point, increasing the amount of cool air will reduce the temperature back to the set point.

As to the set point temperature ranges of claims 30 & 37-38, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant temperature set points, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art,. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The skilled

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artisan recognizes that the temperature directly effects the reformat yield from the reformer zone.

### *Response to Arguments*

Applicant contends that Armstrong does not teach or suggest a method including a fuel reformer positioned within a reformer zone, and a fuel cell stack positioned within a hot zone. This argument is persuasive and the pending rejections are overcome.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Michael Barr, may be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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MW

8/22/05

A handwritten signature in black ink, appearing to read "Michael Barr", with a large, sweeping horizontal stroke underneath.

**MICHAEL BARR**  
**SUPERVISORY PATENT EXAMINER**